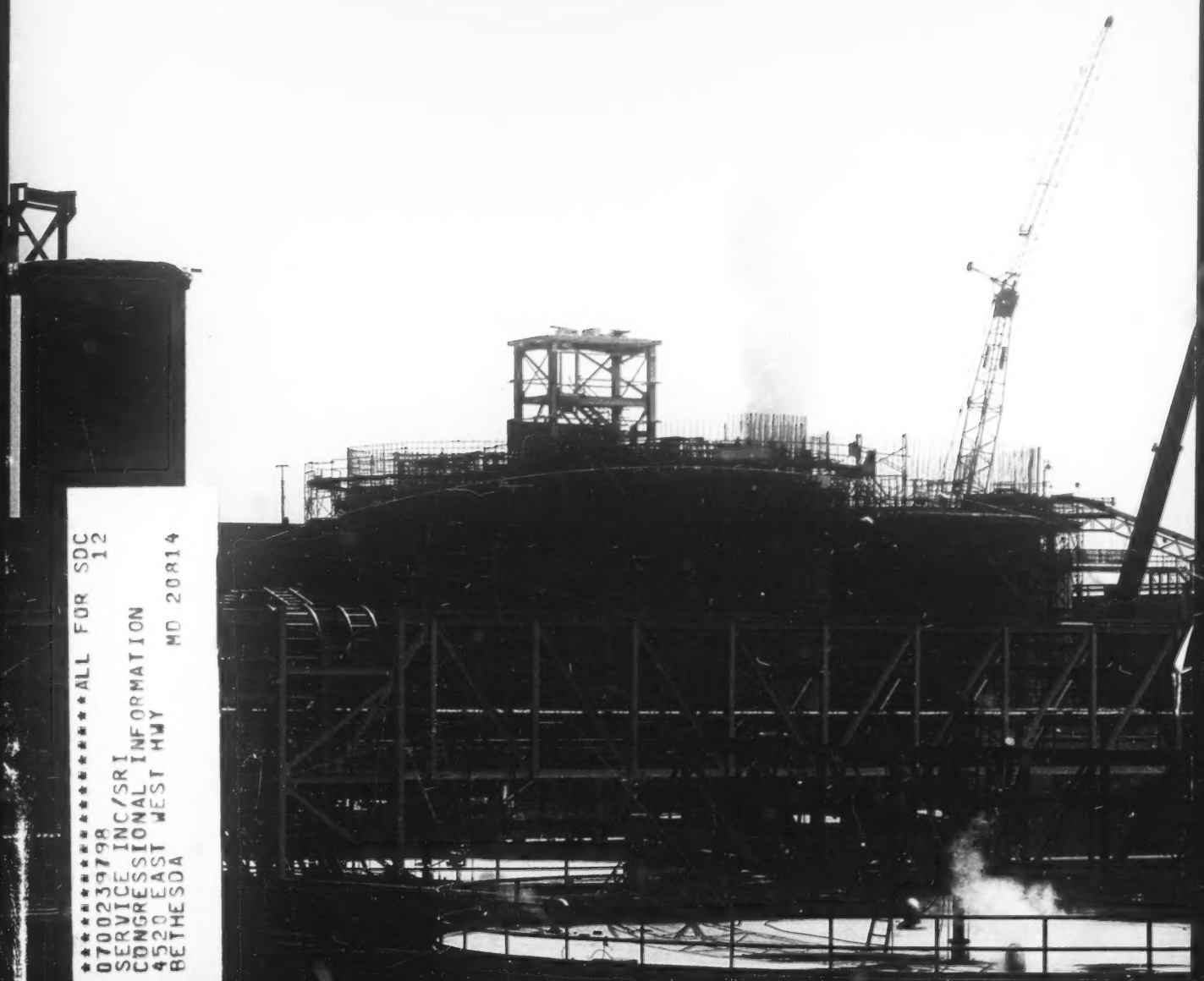
PULP & PAPER

October 1989

C-1975-2



**********ALL FOR SDC 12
07002397 98
SERVICE INC/SRI
CONGRESSIONAL INFORMATION
4520 EAST WEST HWY MD 20814
BETHESDA

Bowater Southern's new pulp mill • 61

Advanced bleach plant control • 132

Soft calendering update • 78

Winder modernization • 143

Volume 63
Number 10

OCTOBER

FOCUS: FINISHING/ CONVERTING

Soft-nip calendering 78
Use of soft-nip calenders is becoming widely accepted as advantages, such as improved micro-smoothness, gloss, and printability, surpass concerns

Sheet length accuracy 86
Understanding and locating problems with rotary cutters can lower the number of oversize sheets, improving productivity and reducing waste

Fastest towel machine 126
Tagsons Papers' Menands, N.Y., converting plant starts up world's fastest towel machine with capability of producing 12,000 towels/min

Winder modernization 143
Generally neglected in most modernization programs, winders can be economically rebuilt to improve mill performance

THE COVER

The $200-million first phase of Bowater Southern's new Calhoun, Tenn., kraft pulp mill features rapid displacement heating in eight new batch digesters and full oxygen delignification ahead of a three-stage bleach plant. A detailed feature on this major expansion begins on p. 61. **(Staff photo by Jim Young.)**

FOCUS: PULPING/ BLEACHING

New pulp mill 61
Bowater Southern's new 900-tpd rapid displacement heating system kraft pulp mill at Calhoun, Tenn., includes O_2-CDEOD bleached pulp

ClO_2 crunch 111
With paper industry demand for chlorine dioxide skyrocketing, suppliers rush to bring new capacity online by early 1992

Bleach plant control 132
Advanced controls implemented as part of a distributed control system improve pulp consistency and allow better operator interface

FEATURES

PAPERMAKING

High-speed problem solving 73
Boise Cascade uses a high-speed video system to get in-depth view of process problems at its mills, resulting in improved quality and less downtime

Clothing update 102
Today's fast, complex fine paper machines require special clothing design; construction; high surface strength, good formation are critical

Donohue Matane pulp mill 136
The joint-venture greenfield bleached chemi-thermomechanical market pulp mill plans to produce 190,000 metric tpy, with startup in late 1990

Manville's No. 6 rebuild 146
Two-phase, $32-million overhaul of wet end, press section, and dryers improves carrier board quality, reliability at West Monroe, La., mill

PROCESS CONTROL

Consistency control 88
Domtar's online monitoring and control program at Cornwall, Ont., ups paper machine output, improves product quality, and cuts fiber cost

ENGINEERING/MAINTENANCE

Updating documentation 159
Mead's Escanaba, Mich., mill cuts its maintenance response time by updating all electrical drawings on a computer-aided design (CAD) system

MANAGEMENT

Managing information 122
Modern information technology can aid paper companies in decision making; a strong MIS organization is needed to remain competitive

Equipment leasing 157
Some pulp and paper companies are turning to leasing as a way to stay competitive and profitable without the confines of ownership

PULP&PAPER

EDITORIAL STAFF

ATLANTA
Editor in Chief Ken L. Patrick
Technical Editor Jim Young
Projects Editor Kelly H. Ferguson

SAN FRANCISCO
Technical Editor Timothy A. Downs
Departments Editor Beverlee Davis

CHICAGO
Technical Editor Andy Harrison

NEW YORK
Consulting Editor John C.W. Evans

BRUSSELS
International Editors Peter Sutton
John Pearson
Hugh O'Brian

NEWS STAFF

SAN FRANCISCO
Executive News Editor Willard E. Mies
Senior News Editor Debra A. Garcia
News Editor Carl P. Espe
News Editor Rob Galin
News Editor Regina McGrath

NEW YORK
News Editor Noel DeKing

PRODUCTION STAFF

SAN FRANCISCO
Managing Editor Margaret L. Brown
Art Editor Nancy E. Bentley
Copy/Production Editor Marta L. Dils
Asst. Copy/Production Editor Virginia C. Stefan

Atlanta: 2000 Powers Ferry Center, Suite 450 Marietta, Ga. 30067; (404) 952-1303; Fax (404) 933-0666
Chicago: 35 E. Wacker Drive, Chicago, Ill. 60601; (312) 372-6238; Fax (312) 372-3864
San Francisco: 500 Howard Street, San Francisco, Calif. 94105; (415) 397-1881; Telex 278273; Fax (415) 543-0256
New York: 370 Lexington Avenue, New York, N.Y. 10017; (212) 683-9294; Telex 220442; Fax (212) 725-0915
Brussels: Chaussée de Charleroi 123a, Boite 5, B-1060, Brussels, Belgium; Telex 846-24672

PUBLISHING HEADQUARTERS

SAN FRANCISCO

Publishing Director Leigh M. Freeman
Group Publisher Leonard E. Haas
Director of Production Andrew A. Mickus
Director of Circulation Jerry M. Okabe
Ad Production Coordinator Gary A. Fong
Marketing Manager Paula J. Irons
Marketing Assistant Robin M. Connery
Editorial Secretary Logan B. Mumaw

Sales and business offices are listed on Advertisers' Index page

MILLER FREEMAN publications
A MEMBER OF THE UNITED NEWSPAPERS GROUP

Chairman of the Board ..... Clifford D. Jakes
President ..... Marshall W. Freeman
Senior Vice President ..... Charles C. Baake
Senior Vice President ..... Leonard E. Haas
Senior Vice President ..... Thomas L. Kemp
Senior Vice President ..... Wini D. Ragus
Vice President ..... Charles H. Benz
Vice President ..... Leigh M. Freeman
Chief Financial Officer ..... Stephen A. Daniels
Treasurer ..... Miller Freeman III
Assistant Treasurer ..... Douglas M. Denny

OCTOBER

COLUMNS

From the Editors 7
by Ken L. Patrick
Career employees deserve names in print

Recycling Update 43
by Andy Harrison
Fiftieth anniversary of the Hydrapulper

Career Development 47
by Roberta Bhasin
Learning to say no

Quality Report 165
by Lars Ingman
New dimensions in quality partnerships

Comment 228
by James R. Tisdale
Newsprint is part problem, part solution

DEPARTMENTS

Conference Calendar 49
News of People 169
New Products 181
Product Review 195
Literature 197
Bookshelf 203
Supplier News 205

SERVICES

Reader Service Index 176
Reader Service Review 177
Reader Service Card 179
Professional Service Directory 208
Classified Advertising 210
Advertisers Index 226

NEWS

Month in Statistics 9
U.S. paper and paperboard production data for July

Market Report 11
Signs of firming for newsprint
Are white paper markets picking up?
Containerboard prices may pick up

Grade Profile 13
Paper-grade chemical market pulp: Pulp market appears to have peaked and is beginning to ease

NEWS SCAN

Canadian mills develop markets 25
Champion moves closer to Brazil 27
BCTMP mill to go forward 27
Malette slates expansion 27
Abitibi to build in Scotland 29
Alcan decides on mill 29
Daishowa, Trans-Rim plan mill 31
Nekoosa slates modernization 31
Scott Paper slates BCTMP mill 31
Perkins Papers to add machine 33
Merfin starts up air-laid line 33
GNN seeks permit for expansion 33
Champion will convert Pensacola 33
Smurfit to use magazine stock 35
North Pacific considers capacity 35
Recycling programs multiply 37
Noranda buys Normick Perron 37
Arcadia to buy shares of Ivex 37
Rexham to buy release liner group 37
Fort Howard finds buyer 39
Federal moves into cups 39
Fire at Boise slows production 39
Dioxin migrates from milk cartons 39

International News 41
Norske Skog to merge with Saugsbrug
Alicel to integrate Alizay pulp mill
SCA agrees to buy Wifstavarfs shares
Metsä-Serla to lift BCTMP capacity
Manville expands holdings
James River, Ferruzzi to buy BT mills
Yuen Foong shopping for mill
Hiang Seng Fibre Container slates mill

PULP & PAPER (ISSN 0033-4081), with which is combined *Paper Mill News*, *Paper Trade Journal* and *Pacific Pulp & Paper*, is published monthly except November when semimonthly by MILLER FREEMAN PUBLICATIONS, 500 Howard St., San Francisco, Calif. 94105. Second class postage paid at San Francisco and at additional mailing office. POSTMASTER: Please send addresses changes to PULP & PAPER, 500 Howard St., San Francisco, Calif. 94105.

© Copyright 1989 by Miller Freeman Publications Inc. All rights reserved.

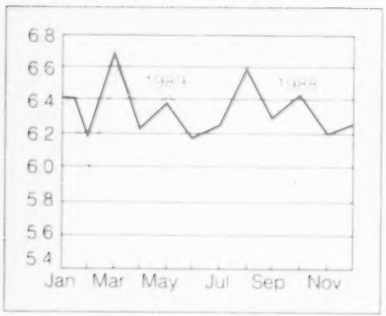
Subscriptions & Address Change: Sent without charge in the U.S.A. & Canada (upon written request) to individuals in pulp, paper, and board manufacturing firms and paper converting firms. To all others there is a subscription charge of $70.00 a year in the U.S. All subscriptions to other countries: US$90.00 a year, except Europe and Mediterranean, US$100.00 (air service included). Single copy, US$7.00, except Buyers Guide, US$35.00. 16mm microfilm, 35mm microfilm, 105mm microfiche, and article and issue photocopies are available from University Microfilms International, 300 N. Zeeb Rd., Ann Arbor, Mich. 48016; (313) 761-4700. Requests, subscription orders, and address changes must show name and position or job of individual,the name and location of mill, plant or office where employed, and the exact business or product produced at this location.**Send subscription correspondence to:** Circulation Department, PULP & PAPER, 500 Howard St., San Francisco, Calif. 94105. For address change, include label from recent issue.

ABP

BPA

5

U.S. paper and board production



U.S. production of paper and paperboard totaled 6.3 million tons in July, up 1.1% from the same month last year, according to the American Paper Institute. Production continued to hold steady at near-record levels, with output through the first seven months at a seasonally adjusted annual rate of 76.6 million tpy, down 0.1% from a year ago. The outlook was brightened by a stronger-than-expected upward revision in GNP growth and by the fact that inventories among industrial consumers of paper and paperboard are at minimum levels. This should preclude an inventory-cycle downturn anytime soon, according to API.

Among major grades, printing and writing paper was off 2.1% overall from July 1988. Uncoated groundwood paper was up almost 10%, but the larger uncoated free-sheet and coated grades were down 1.7% and 5.8%, respectively. Containerboard for domestic use was up 1.0%, and boxboard posted a 1.7% gain.

Canadian newsprint shipments totaled 775,000 metric tons in July, down 2.4% from a year earlier. Woodpulp exports plummeted 20.4%, to 534,000 tons. Newsprint and pulp mills both operated at 94% of capacity, with pulp mills down 6 percentage points from July 1988 and newsprint mills off 2 points. ■

	Latest month (000 short tons)		% change from year ago	Annualized year-to-date (000 short tons)	% change from year ago
PAPER & PAPERBOARD PRODUCTION[1]					
Newsprint	July	522	8.5	5,979	2.5
Uncoated groundwood (s)	July	148	10.4	1,744	9.9
Coated paper (s)	July	568	-4.4	6,946	-5.8
Uncoated free-sheet (s)	July	852	-6.0	11,052	-1.7
Other printing/writing	July	124	6.0	1,527	0.6
Total packaging and other paper (s)	July	390	-4.4	4,842	3.3
Tissue	July	458	1.3	5,578	2.4
Total paper	**July**	**3,062**	**-0.9**	**37,668**	**-1.3**
Unbleached kraft paperboard	July	1,685	4.1	19,592	1.2
Semichemical medium	July	479	-0.2	5,701	1.6
Bleached paperboard	July	431	10.8	4,574	1.3
Recycled paperboard	July	683	-1.6	8,674	-2.4
Total paperboard	**July**	**3,279**	**3.1**	**38,541**	**0.8**
Total U.S. paper and paperboard output	**July**	**6,341**	**1.1**	**76,209**	**-0.2**
PULP, WASTEPAPER & FIBER[2]					
Total U.S. woodpulp production	June	5,104	3.1	61,956	2.1
Market pulp production	June	738	7.6	8,824	4.3
Wastepaper consumption at paper/board mills	June	1,591	1.7	18,928	0.3
Pulpwood consumption (cords)	June	8,348	8.6	97,728	2.4
CONVERTED PRODUCTS STATISTICS[3]					
Corrugated box shipments (billion ft²)	July	24.550	0.0	181.777[6]	1.7
Containerboard inventories at U.S. box plants and mills	July 1	2,479	-5.3		
INTERNATIONAL TRADE[2]					
U.S. paper imports (including products)	June	1,040	-1.0	12,841	-0.1
Imports of Canadian newsprint	June	637	-7.7	7,985[6]	-6.9
U.S. paper exports (including products)	June	503	6.1	6,303	12.6
Exports of unbleached kraft linerboard	June	146	-16.6	2,264	4.6
Exports of woodpulp	June	562	13.1	6,354	17.3
Norscan pulp inventories[4]	July 31	930	15.0		
Norscan pulp operating rates[4]	July	96%	97%	95%	98%
CANADIAN STATISTICS[5] *(reported in metric tons)*					
Total newsprint shipments	July	775	-2.4	5,539[6]	2.3
Operating rates	July	94%	96%	96%	99%
Inventories held by U.S. consumers	July 31	1,316	-15.6		
Other paper/board shipments	July	534	0.6	3,852	-1.2
Woodpulp shipments (export only)	July	562	-20.4	4,535	-4.0
Operating rates	July	94%	100%	93%	96%

1. American Paper Institute. 2. API, Bureau of Census, American Pulpwood Assn. 3. Fibre Box Assn, Paperboard Packaging Council. 4. North American/Scandinavian paper-grade market pulp. 5. Canadian Pulp & Paper Assn. 6. Not annualized. (s) = Shipments.

Paper-grade chemical market pulp: Pulp market appears to have peaked and is beginning to ease

Grade structure: Chemical paper-grade market pulp is sold in the open market and does not include captive pulp used onsite or shipped to affiliated mills within North America. Pulp is divided into grades based on whether it is made from softwood or hardwood fiber, whether it is produced by the sulfate (kraft) or sulfite pulping process, and whether it is bleached, semibleached, or unbleached.

Northern bleached softwood kraft (NBSK) is the premium pulp grade because of its long fiber length and strength. U.S. chemical paper pulp statistics include about 1.8 million tons of fluff pulp production (including exports) used in diapers and other absorbent hygiene products. Dissolving and mechanical pulp grades are excluded from the statistics.

Production/capacity: The pulp market appears to have peaked last spring and is now beginning to soften, even though operating conditions remain strong. North American producers announced unchanged dollar prices for the third and fourth quarters, and some spot discounting has begun to appear on southern U.S. pulp grades (mainly mixed hardwood).

Latest industry statistics show that North American and Nordic producer inventories of chemical paper-grade market pulp jumped 82,000 metric tons in August to end the month at 1.027 million tons—the first time that inventories have been above 1 million tons in almost two years. This followed a 145,000-ton jump in inventories in July.

At the same time, indications are that paper mills in the U.S., Europe, and Asia have begun to reduce their purchased pulp inventories since pulp has become readily available and no threat of further price increases exists.

Future outlook: The pulp market is expected to remain relatively stable through the end of 1989 because of continuing strength in the U.S. and other world economies combined with only limited market pulp capacity expansion. Canadian capacity for chemical paper-grade pulp is expected to grow only 2.2% in 1989, while U.S. capacity is to increase 0.8%, according the latest industry surveys. As a result, Canadian and U.S. market pulp mills are expected to run in the 97% to 98% range in 1989.

North American capacity growth, however, will begin to accelerate in 1990 and 1991 as a number of major new projects begin to start. Several major new pulp mills are also scheduled to start up in Latin American over the next several years.

In addition, substantial new chemithermomechanical pulp (CTMP) capacity has been coming online in Canada. Mechanical market pulp capacity in Canada is expected to jump from 745,000 tons in 1988 to 1,298 million tons in 1991. New CTMP producers probably will have to price competitively to attract interest in their new pulp from nonintegrated paper mills.

Kraft pulp will also be facing increased substitution from fillers with the spread of alkaline papermaking and, to a lesser extent, from secondary fiber with the increased government pressure on the industry to recycle.

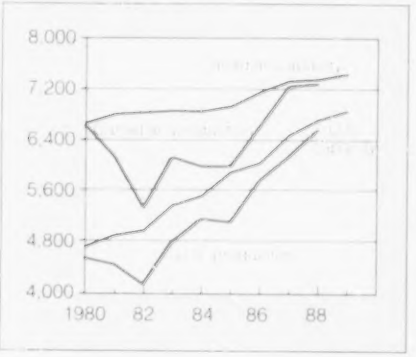
Even if no recession occurs, operating rates for North American mills are expected to decline from 97% to 98% in 1989 to 94% to 95% next year and 92% to 93% in 1991.

Pricing: The price of benchmark northern bleached softwood kraft pulp peaked at $840/ton in Europe ($830 in the U.S.) in the second quarter of 1989. This represented a $30/ton increase from the first quarter. Hardwood producers raised prices $20/ton but were able to only partially implement their increase in the U.S. By the third quarter, there were reports of spot discounting on southern mixed hardwood pulp. This was partially due to increased volume of roll pulp being offered by mills that normally produce printing/writing paper.

The market is expected to remain relatively stable through the end of this year, with some continuing spot discounting. Further pressure on prices could develop next year as new capacity begins to come on and with a further slowing in world economic growth. Since the end of 1985, the price of NBSK has more than doubled.

Year-end U.S. market pulp prices ($/metric ton delivered for NBSK: 1985, $390; 1986, $480/$520; 1987, $610; 1988, $760.

SUPPLY/DEMAND (000 tons)



FORECAST (000 short tons)

U.S.	1987	1988	1989e
Production	6,175	6,530	6,730
Capacity[1]	6,444	6,769	6,826
Utilization rate	95.8	96.5	98.6
Imports	2,700	2,836	2,910
Exports	3,670	3,876	4,100
Apparent U.S. consumption	5,205	5,490	5,540
Canada			
Production	7,200	7,225	7,220
Capacity[1]	7,335	7,390	7,429
Utilization rate	98.2	97.8	97.2

e = Estimate

1. Based on 1988 American Paper Institute and 1989 Canadian Pulp & Paper Assn. capacity surveys

TOP NORTH AMERICAN PRODUCERS

(000 short tons)

Company	Annual capacity U.S.	Canada	Total	Market share (%)
1. Weyco[1,2,3,5]	550	660	1,210	8.5
2. G-P[1,2,5,6]	1,115[a]	—	1,115	7.8
3. CP[1,2,3,4]	—	840	840	5.9
4. IP[1,2,5]	820	—	820	5.8
5. P&W[1,2]	425	230	655	4.6
6. Fletcher[1,2,3,4]	—	620[b]	620	4.3
7. Repap[1,2,3,4]	—	550	550	3.9
8. Canfor[1,2,3,4]	—	520[c]	520	3.6
9. GNN[1,2,3]	517	—	517	3.6
10. MB[1,2,3,4]	—	500	500	3.5

Market share of top five companies: **32.5%**
Market share of top ten companies: **51.5%**
Total North American capacity (1989)
14.255 million metric tons

1. Bleached softwood kraft. **2.** Bleached hardwood kraft. **3.** Semibleached softwood kraft. **4.** Unbleached kraft. **5.** Bleached sulfite. **6.** Fluff pulp.
a. Includes Brunswick Pulp & Paper. **b.** Includes Crown Forest and BCFP (but excludes minority interests). **c.** Includes 50% interest in 230,000-tpy Howe Sound joint venture.

MARKET PULP

Canadian CTMP mills developing new markets

A large volume of Canadian chemi-thermomechanical pulp (CTMP) has begun to appear just as the North American pulp market is beginning to show some signs of weakness. Although new mills that started up in the last expansion round in 1987-88 are still moving up their production curves and developing new market niches, additional new mills are being announced for 1990-93.

About 1.7 million tpy of new Canadian capacity is either under construction or proposed for this period on top of an existing capacity base of about 930,000 tpy. Three new mills, Cascades Inc. (Port Cartier, Que.), Fibreco Export Inc., and Millar Western Pulp Ltd., started up last year, while an existing Quesnel River Pulp Co. mill was expanded, adding a total of 750,000 tpy of capacity. These new mills are now reported to be running at about 50% to 80% of capacity, with a significant amount of the output going to the Far East and Europe as well as the U.S. Reliable production/shipment figures are not yet available because several new mills do not belong to the Canadian Pulp & Paper Assn.

The first bleached chemi-thermomechanical pulp (BCTMP) mills created higher-freeness softwood pulps, most of which were used for tissue/towel applications. The newer mills are focusing on lower-freeness pulp, particularly aspen, for use in printing/writing paper. A large number of trials have been under way at nonintegrated and partially integrated U.S. paper mills. The results have been positive and negative. "There are definite papers where BCTMP is presently not acceptable and others where it is superior or offers cost advantages over some other possibilities," said Dan Breck, new vice president-marketing, Fibreco Pulp Inc.

Classifications pose barrier. Nevertheless, he noted that a major barrier to the use of BCTMP in wood-free printing and writing paper is "outdated grade classifications limiting mechanical pulp content to 10%." Such rules equate BCTMP with earlier stone groundwood pulp and are no longer valid, Breck explained. "Many papermakers and end users are aware of this but are restricted from using new types of fiber for fear of jeopardizing market position or incurring stiff legal penalties."

Printing/writing grades in which BCTMP is believed to have significant potential include forms paper, uncoated bond, and some book paper. Probably the biggest quality problem now facing BCTMP-containing paper is some brightness reversion over time. However, about a third of the paper specifiers in a recent survey indicated they would be willing to switch to a BCTMP-containing grade if no brightness loss occurred over a six-month period. Nearly two-thirds would be satisfied if no loss occurred over a one-year period, according to a study by NLK-Celpap Inc.

Pricing strategy. While part of the appeal of BCTMP has probably been such attributes as bulk and opacity, another part has certainly been cost and concern among nonintegrated papermakers with obtaining adequate pulp supplies. Now, with southern hardwood pulp prices weakening, some papermakers might feel tempted to switch back. Canadian BCTMP producers reportedly have been pricing their pulp about $80 to $120/ton below hardwood kraft pulps.

"If CTMP producers do not keep their price differential, a lot of hard work developing new products and markets is just going to be tossed overboard," one BCTMP buyer warns. While some of the new Canadian BCTMP mills have competitive manufacturing costs, some might end up being squeezed if a sharp decline in kraft pulp prices occurs. In general, however, the new Canadian mills are in a better cost position than BCTMP mills in Scandinavia, and other parts of the world due to availability of the best species of wood (spruce and aspen) and low hydropower costs. One consultant expressed doubt that another market BCTMP mill would be built in Scandinavia and progress on a couple of projects proposed for the U.S. is being viewed skeptically.

An environmental advantage? Another promising new BCTMP market is in fluff pulp for baby diapers and sanitary products. Interest in BCTMP, especially in Europe, was spurred by

Canadian market CTMP mills, existing and proposed.

Company	Location	Capacity (000 metric tpy)	Startup date
Quesnel River Pulp Co.	Quesnel River, B.C.	90S[1]	1982
Temcell	Temiscaming, Que.	95 A/S	1988
Stone Container Corp./ Consolidated-Bathurst Inc.	Bathurst, N.B.	90 S[2]	1988
Cascades Inc.	Port Cartier, Que.	210 S	1988
Fibreco Export Inc.	Taylor, B.C.	180 S	1989
Quesnel River Pulp Co.	Quesnel River, B.C.	60 S[3]	1989
Millar Western Pulp Ltd.	Whitecourt, Alta.	210 A/S	1989
Donohue-Malbaie Inc.	Matane, Que.	190 S	1990
Temcell	Temiscaming, Que.	150 A/S	1991
Alberta Energy Co.	Slave Lake, Alta.	120 A	1991
Millar Western Pulp Ltd.	Meadow Lake, Sask.	240 A/S	1992
Louisiana-Pacific Corp.	Chetwynd, B.C.	155 S	1992
Shinho Paper Manufacturing Co., Ltd.	Thunder Bay, Ont.	150 A[3]	1992
Cascades Inc.	Cabano, Que.	115 A	1992
Fibreco Export Inc.	Taylor, B.C.	180 A	1993
Alcan Foil Products	Vancouver, B.C.	220 A/S	n.a.
Taiwanese paper company	Alberta	240 A/S	n.a.

A = aspen (the balance is softwood, mainly spruce and some lodgepole pine).
1. Reflects about half of total capacity available for market pulp, remainder mainly for shipment to Japanese partner.
2. Reflects about half of total capacity available for market pulp, (mainly unbleached).
3. Abitibi-Price to take about one-third of output.
Note: Scott Paper Ltd.'s planned BCTMP mill at Crabtree, Que., is mostly captive.

concern over dioxin in bleached kraft fluff pulp. Some diaper manufacturers in Europe, such as SCA's Peaudoce, have introduced CTMP-containing diapers advertised as friendly to the environment. However, Procter & Gamble has countered this by using "chlorine-free" bleached kraft fluff in its diapers in Europe and reportedly has increased its market share in Sweden.

For a current roundup of issues involving CTMP, order the proceedings of *Pulp & Paper*'s "CTMP Markets: Present & Future" conference, held Sept. 19-20, 1989. For more information, contact the *Pulp & Paper* Seminars Dept. Telephone: (415) 995-2471; fax: (415) 543-0256. ■

Champion moves closer to greenfield mill in Brazil

Champion International Corp.'s Brazilian subsidiary, Champion Papel e Celulose SA, expects to get government approval in November to begin construction of a greenfield pulp and paper mill near Três Lagoas, in Mato Grosso do Sul state. A company spokesman said that Champion has decided to go with the greenfield mill rather than expand its existing pulp and free-sheet mill in Mogi-Guacu, which is about 350 miles from the greenfield site. The 600-metric-tpd pulp mill will be supplied by eucalyptus plantations. Already, Champion has acquired about 120,000 acres on which to plant the fast-growing trees. The pulp mill is expected to start up in early 1993.

Champion will be able to take advantage of Brazilian laws that allow up to a 70% discount of excise taxes on the sale of finished product during the first five years of production, according to the *Journal of Commerce*. It also will apply for benefits under a Brazilian export incentives program that will enable it to import equipment and components. Reportedly, Champion will spend $850 million over the next ten years in Brazil, and investments in the new mill could reach $1 billion. ■

First U.S. BCTMP mill plans go forward with investors

A group of investors that has been planning to build a bleached chemithermomechanical pulp (BCTMP) mill in San Augustine, Texas, for the past three years indicated last month that it is near to signing major joint-venture partners and expects to make an announcement shortly. Negotiations are nearing an end with General Electric Credit Corp., and some overseas investors are also interested.

The greenfield mill project was launched in 1986 by Evco Industries Inc., a wood products producer and exporter. Later, Bill Price, a seasoned marketing executive in the paper industry who now works for Newsprint South Inc., joined the venture. Price was followed by Ted Strauss, director at Bear Stearns, who brought his financial expertise to the group.

Besides General Electric, investor groups from Japan, Rep. Korea, and Austria are considering participating in the project, noted William R. Evans, president and CEO, Evco. Trials on BCTMP made from the "overabundance" of southern yellow pine available within a 100-mile radius of San Augustine were very positive, he said. Bleaching studies indicated that a brightness as high as 83° can be obtained economically.

Although more bleaching agents are required to brighten the pulp than needed when using spruce or aspen, the pulpwood around San Augustine appears to be stronger and better for BCTMP in other ways than aspen, noted Evans. Sprout-Bauer is studying a chip washing process that would eliminate any aftertaste from BCTMP so that it could be used in food or liquid packaging.

Output from the 500-metric-tpd mill would be geared to the diaper/sanitary napkin and food board (milk cartons, frozen food containers, etc.) end uses, he said. Letters of intent have been signed to purchase about 30% of the mill's production. Robert Davidson, former president of Price & Pierce International Inc., was recently named to handle marketing.

The company has also named Ford Bacon & Davis to do the preliminary engineering work, Brown & Root U.S.A. for the not-to-exceed price of the project, and Arthur Andersen & Co. for cash flow projections. A review of the project done by Nystrom Lee Kobayashi (NLK) Inc. for General Electric was positive, noted Evans. The partners expect mill construction could begin late this year and are aiming for a 1991 startup. The project is not to exceed $308 million and will be 100% financed. ■

Malette slates C$150-million expansion at Smooth Rock

Malette Kraft Pulp & Power, a division of Waferboard Corp., announced that it will gradually expand the capacity of its bleached kraft softwood market pulp mill in Smooth Rock Falls, Ont., from about 305 metric tpd to over 500 tpd by mid-1992.

The C$150-million expansion and modernization will also enable the mill to make hardwood pulp. The project is subject to completion of final negotiations with the government and financial institutions. A mill spokesman said that both the provincial and federal governments reportedly will provide a small amount of assistance.

Malette said that the project will improve pulp quality, reduce chemical costs, and exceed environmental standards. It will also provide at least 250 new jobs in woodlands and transportation. The project will take place in three stages.

The pulp machine will be installed by late 1990. (The mill has purchased a used pulp machine from the U.S.) The second phase, to be completed sometime around the beginning of 1992, involves installation of a larger recovery boiler, which is going to be partially or completely new, and evaporators.

The third stage, to be completed in 1992, will involve expansion of the existing Kamyr continuous digester, probable installation of an oxygen delignification system, and upgrades to the bleach plant, chlorine dioxide generators, and recausticizing area. This will enable the mill to meet the biological oxygen demand level of 1.4 kg/tpd of pulp that Ontario has established for 1992.

When the project is completed, the mill will make 75% softwood pulp and 25% hardwood pulp from poplar. Malette currently sells its output in a 600-mile radius of the mill: about 75% in Canada and 25% in the U.S. After the expansion, it hopes to export pulp to Europe for the first time, a mill spokesman said.

The mill's existing cogeneration plant will provide energy for the expansion. It currently produces about 10 to 12 MW/day of electricity by burning hog fuel. When the expansion is complete, the mill will consume about 15 MW/day, while the excess 5 to 12 MW will be sold to Ontario Hydro. ■

RECYCLED PAPER

Smurfit to use magazine stock in newsprint

This fall, Smurfit Newsprint Corp. will begin using some postconsumer coated magazine paper at its 211,000-metric-tpy Oregon City, Ore., recycled newsprint mill. Smurfit's reclamation division has already begun collecting magazines from Oregon residents, who are separating them from their old newspaper (ONP). The new flotation system, slated to go online last month, will eventually enable the mill to replace about 30% of its ONP with magazine stock. Currently, the mill's furnish is about evenly divided between woodpulp and ONP. This would make Smurfit the second newsprint mill in the U.S. to use magazine paper to make newsprint. Stone Container Corp.'s Snowflake, Ariz., newsprint mill also uses magazine stock in its furnish. Smurfit has coined its deinking system "reNews."

A mill spokesman said that Smurfit has been studying recycling magazine stock for two to three years, and trial runs have shown that a sheet made with this fiber has higher brightness and better printability and is stronger than a sheet made with ONP. Clay residue from the repulped magazines helps remove pressure-sensitive adhesive contaminants. The Counterflo washing systems allow flexographic-printed newspaper to be deinked. Flotation cells are supplied by Beloit. Other equipment suppliers were not named.

The company plans by early 1990 to complete installation of the equipment at its Newberg, Ore., mill, which has capacity for about 350,000 tpy of newsprint. This will probably require the company to draw magazine stock from Washington state as well. The Oregon City mill is the older of the two mills and has three machines. A few years ago, Smurfit said it was considering converting one or more of the machines to produce higher-value groundwood printing paper, and it is still reviewing that option. However, the company now is concentrating much of its major capital investment attention on a proposed 255,000-tpy recycled newsprint mill to be built somewhere in the Northeast.

Deinking upgrades at the two Oregon mills are part of a $50-million, three-year quality-improvement plan begun by Smurfit shortly after it bought out Publishers Paper Co. in 1986. Other improvements in this program included work on the paper machines, a thermomechanical pulp plant, and process controls. At the same time, productivity-related improvements were completed in another capital program. Further details were not released, however. ■

North Pacific considers adding deinking capacity

North Pacific Paper Co. is tentatively planning to add a deinking plant to its Longview, Wash., 470,000-metric-tpy newsprint mill. The plant would be built to coincide with the addition of a 230,000-tpy newsprint and groundwood paper machine at that mill by sometime in 1991.

North Pacific, which is held by Weyerhaeuser Co. (90%) and Jujo Paper Co. Ltd. (10%), is currently waiting for environmental permits, a source said. If all goes as expected, construction would begin this fall. The approximately $350- to $400-million project was originally announced at the beginning of 1989, when it was thought that the pulp needed for the third paper machine would require adding thermomechanical pulping capacity. However, as recycling efforts and legislation mandating use of recycled newsprint have swept the country, recycled fiber has become a better choice, it was noted.

The deinking plant is expected to produce 162,000 to 180,000 metric tpy of deinked pulp made from about 200,000 to 215,000 tpy of old newspapers. At the same time, the mill's existing nine thermomechanical pulp refining lines, which currently supply about 90% of the fiber furnish for the two newsprint machines, would be upgraded to raise efficiency and increase output, a source said. Kraft market pulp would make up any deficiencies in raw material needs for the time being.

The paper machine reportedly is being purchased from Beloit Corp., supplier of the mill's other two twin-wire paper machines, according to reliable sources. The company has refused to comment on the status of th project lately, indicating that it is still "being studied." However, the addition of deinking capacity into the plans changes the outlook for the new machine quite a bit, giving it a competitive edge among 11 newsprint machines coming online in North America sometime between 1989 and 1991.

The North Pacific mill would be the first recycled newsprint facility in Washington and only the second in the entire West. Smurfit Newsprint Co. already has two recycled newsprint mills in Oregon with total capacity of about 561,000 tpy. ■

U.S. recycled newsprint legislation, by state.

State[1]	Consumption tax on virgin newsprint[2]	Mandatory goal	Useage timetable	Status
California	None	25% 50	1991 2000	Pending
Connecticut	None	20 90	1993 1998	Passed
Florida	10¢/ton until 10/92. 50¢/ton if goal not reached	50	1992	Passed
Illinois	10¢/ton	10 50	1992 1998	Pending
New Jersey	None	45 90	1989 1991	Pending
New York	None	10	1991	Pending
Wisconsin	10% of list price per ton	10 50	1991 1994	Pending

1. Does not include preference purchasing provisions for state agencies. Includes states where legislation is most advanced. Louisiana, Minnesota, Nebraska, Oregon, Pennsylvania, Rhode Island, and Virginia are other states considering similar bills.
2. Applies to amount of total consumption that must be recycled-fiber based. Ranges imply goals to be phased in between these dates.

Source: American Newspaper Publishers Assn.